

ANALYST:		VPDES NO	
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Parameter: Fecal Coliform

Method: A-1

09/05

METHOD OF ANALYSIS:

18TH EDITION OF STANDARD METHODS-9221C E

		Y	N
1)	Is an analytical balance with a sensitivity of at least 1.0 mg used for weighing amounts of 2 grams or less? [9020 B.2.b]		
2)	Is a pan balance with a sensitivity of at least 0.1 gram used for weighing amounts larger than 2 grams? [9020 B.2.b]		
3)	Are water bath incubators kept covered? [9030 B.1] NOTE: Well Dri-Bath incubators are approved for this method.		
4)	Is water depth in water bath incubators sufficient to immerse tubes to the upper level of the media? [9221 E.1.b]		
5)	Are corrosion proof (plastic coated, stainless steel, etc.) racks used in the incubators? [9020 B.2.o]		
6)	Are all reagents of ACS or equivalent grade? [9020 B.3.e]		
7)	Are prepared reagents dated, labeled and initialed by the preparer? [9020 B.3.e]		
8)	Is unopened dehydrated media older than 2 years discarded? [9020 B.3.h]		
9)	Is media autoclaved only once at 121°C for 10 minutes? [9221 E.2.a]		
10)	Is dehydrated media stored in tightly closed bottles in the dark, at less than 30°C, in an atmosphere of low humidity? [9050 A.1]		
11)	Is opened dehydrated media discarded after 6 months? (May be kept up to one year if stored in a desiccator and remains free flowing and free of lumps.) [9020 B.3.h]		
12)	Is media prepared in batches that will be used in less than 1 week? [9050 A.1]		
13)	Is the pH of A-1 media checked and adjusted to 6.9 ± 0.1 su prior to sterilization in an autoclave? [9221 E.2.a]		
14)	Is media stored out of direct sunlight to prevent excessive evaporation? [9050 A.1]		
15)	If liquid media is refrigerated is it incubated overnight before use? [9050 A.1]		
16)	Are fermentation tubes containing gas bubbles discarded? [9050 A.1]		
17)	Following rehydration is the media dispensed and sterilized within 2 hours? [9050 A.3]		
18)	Is autoclave capable of reaching 121°C within 30 minutes? [9030 B.3]		
19)	If hot air sterilizing oven is used is it of sufficient size to prevent internal crowding, and constructed to give uniform and adequate temperatures of $170^{\circ}\text{C} \pm 10^{\circ}\text{C}$? [9030 B.2]		
20)	Is glassware clean, free from cracks and chips, and stored properly? [9020 B.3.a]		
21)	Do pipets have error rates that do not exceed 2.5%? [9030 B.9]		
22)	Is all glassware, except when in metal containers, sterilized for at least 60 minutes at a temperature of 170°C? If it can be demonstrated with recording thermometers that temperatures are uniform, 160°C is adequate. [9040]		
23)	Are pipets in metal containers sterilized at 170°C for a minimum of 2 hours? [9040]		

		Y	N
24)	Are all dilution bottles equipped with either glass stoppers or screw caps equipped with liners that do not produce toxic or bacteriostatic action upon sterilization? [9030 B.13]		
25)	Are pipets sized to deliver the required volume accurately and quickly? [9030 B.9]		
26)	Is sufficient room left in the sample container to facilitate mixing by shaking? [9060 A.3]		
27)	Are dilutions capable of showing permit excursions? [Permit]		
28)	Are samples diluted sufficiently to insure that at least one dilution series contains a fermentation tube with no bacterial growth? [Permit; 9221 C.2]		
29)	Is double strength A-1 media used with 10 mL samples? [9221 E.2.a]		
30)	Are samples incubated for 3 hours at $35 \pm 0.5^{\circ}\text{C}$ and transferred to a $44.5 \pm 0.2^{\circ}\text{C}$ waterbath for an additional 21 ± 2 hours? [9221 E.2.b]		
31)	Are all procedures carried out in a manner that will neither inhibit desired bacterial growth nor cause contamination? [9060 A.3]		
32)	Are samples collected in a manner that will prevent contamination? [9060 A.3]		
33)	Is MPN properly calculated? [9221 C.2]		
34)	Is each fermentation tube properly identified? [Permit]		
35)	Is glassware tested annually for inhibitory residues or is the detergent certified by the manufacturer to be free of inhibitory effects? [9020 B.3.a.2]		
36)	Are all autoclaved materials identified with heat sensitive tape? [9020 B.2.i]		
37)	Are samples dechlorinated (if chlorine is present) and cooled to 10°C immediately after collection? [40 CFR Part 136.3 Table II]		
38)	Is sample holding time of 6 hours being met? [40 CFR Part 136.3 Table II]		
39)	Are tubes sterilized prior to disposal? [Safety]		

PROBLEMS: